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ABSTRACT

Local education agency evaluations were systematized to be combined to provide information about the outcomes of occupational programs in the state. This was achieved by developing a manual of evaluation procedures and tools for use by teachers of occupation programs. Pre-test and post-test data from 397 students in 1971 and 287 students in 1972 provided information on many variables, including ability, disadvantaged status, knowledge of content, attitudes toward work, job, and school, and self-evaluation in the work. Data from local agencies, when systematized, can be combined to provide more comprehensive descriptive information about program outcomes. (Author)

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SYSTEMATIZING LOCAL EDUCATION AGENCY EVALUATIONS AS A BASIS FOR STATEWIDE EVALUATION OF OCCUPATION COURSES

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Systematizing Local Education Agency Evaluations as a Basis for Statewide Evaluation of Occupation Courses

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Home Economics Occupations Courses have become more firmly established in New Jersey secondary schools since their inception in 1965. Educators have become increasingly interested in striving to develop and to improve evaluative processes as an integral part of these courses. The objective of this project was to initiate and to continue an effort toward systematizing self-evaluations, within local agencies, of funded home economics occupation courses in the state. One purpose in systematizing local agency evaluations was to make it possible to combine the results from each program, thus providing more comprehensive information about programs throughout the state.

Overview of Development and Procedures

This evaluation of home economics related occupation courses was initiated in April, 1970. The four phases of the project were implemented from April, 1970 through May, 1973.

Phase I included the following activities:

1. reviewing the literature related to evaluating educational programs generally, and specifically home economics programs.

2. planning and implementing three conferences with teachers of home economics occupation courses, to develop criteria for evaluation, to share information about evaluative procedures, and techniques, and to identify problems encountered in evaluation of local programs.

Phase II was planned on the basis of information and insight acquired during Phase I. During Phase II, a framework for systematizing evaluations in each local education agency was developed. This framework was specified and detailed in the form of a manual for teachers entitled, Self-Evaluation: Home Economics Occupation Courses and Co-Operative Education Programs. The manual had two sections: Part I, "Spotlight on Student Achievement," and Part II, "Program Facilitators."

Survey instruments, attitude, and content measures pertinent to these two broad areas were included in each section. Scoring information and report forms were also included.

A preliminary draft of the manual was critiqued by teachers of the courses and programs to be evaluated. A revised draft was duplicated and distributed to 45 teachers for preliminary testing between January and May, 1971. Twenty-five teachers returned pre-test and post-test data for 397 students enrolled in 27 courses.

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The preliminary testing provided data with which:

to check the reliability of some of the measuring devices for New Jersey students

to establish a base line for examining data obtained in subsequent years

to revise the procedures set up in the evaluation manual

Phase III was implemented between August, 1971 and August, 1972. Revised manuals and test materials for each student enrolled in occupation courses were distributed to teachers and explained at meetings. A number of teachers not attending the meetings received the materials by mail. Teachers pre-tested students in the first six weeks of the course and administered the post-tests during April. Teachers (22) of 23 courses and programs returned usable pre-test and post-test materials for 287 students. This number of programs constituted 37 percent of the 62 occupation programs funded during fiscal year 1972, in New Jersey.

Phase IV involved the analysis of the data and preparation of this report. Throughout this analysis, mean score data pertaining to student achievement were analyzed with occupational area, ability of students, and disadvantaged status treated as independent variables. Post-test mean scores obtained in 1971 during Phase II, were incorporated into tables to serve as a base line for interpreting pre-test and post-test scores obtained in 1971-72.

Measurement

Questionnaires and measuring devices from which the findings were derived are described in detail in the body of this report. Generally, the level of reliability was acceptable. Split half reliability correlation coefficients ranged between .6 and .7 on the measures of course content, with a wider range on attitude measures. There was evidence of reliability levels being lower for below average ability students. Concern existed that the vocabulary level on some questions may have exceeded the reading skills of below average students. It is possible that reduced reliability may be linked to the level of reading difficulty in some items. These are limitations to be acknowleged in interpreting the findings derived from student responses.

Findings

Program Characteristics, Teacher Characteristics, and Teacher Evaluations

Length of program. In 1972, there was evidence of a slight shift to increasing the length of the programs and to increasing class time, as contrasted to 1971.

Work. In 1971 and 1972, teachers reported simulated work experience in approximately 60 percent of the programs. The remaining 40 percent provided real work experience.

Employment Surveys. An increased proportion, almost 20 percent of teachers in 1972 reported having completed surveys of the local employment situation, as compared with teacher reports for 1971.

Advisory Councils. Advisory Councils seem to have a relatively minor influence on programs. In 1971, 13 out of 25 teachers reported a total of 17 meetings; and in 1972, 7 teachers out of 22 reported 9 meetings.

Enrollment. Average enrollment per class was 16.8 in 1971 and 13.7 in 1972.

Age and Education. The majority of the teachers were over 40 years of age and have Bachelors degrees.

Attitudes. The large majority of teachers had strong positive attitudes for these occupational courses and felt quite competent to teach these courses.

A smaller majority expressed satisfaction with the characteristics of students enrolled in the courses.

Inadequacies. Public relations, evaluation of students, facilities and resources were most frequently cited as inadequacies in the program.

Student Characteristics and Performance

Ability. There was an increase of about 13 percent from 49 percent in 1971 to 63.7 percent in 1972 in the proportion of students categorized as having average ability, with decreases in the above average and below average categories between 1971 and 1972.

Low Income, Minority, Disadvantaged. Students from low income families increased proportionally by about 22 percent (43 percent, 1971; 65 percent, 1972); from minority groups, by 8 percent (16 percent, 1971; 24 percent, 1972); and

being disadvantaged, by 20 percent, from 41 percent in 1971 to 61 percent in 1972.

Home Economics. About 60 percent of the students were reported to have had previous experience in home economics.

Attendance. Students enrolled in the majority of courses attended on the average 2 1/2 days more as a result of being absent less frequently than the preceeding year. Teachers reported a loss of approximately 9 percent of the students pre-tested in 1971-72.

Performance on Course Content. Mean score analysis for 1971-72 by occupational and ability levels showed students achieving scores that clustered around the theoretical means on both pre-tests and post-tests. Somewhat contrary to expectations, only students enrolled in clothing related occupation courses and cooperative education programs showed some gain between pre-test and post-test scores.

A comparison of mean scores for advantaged and disadvantaged categories of students found no difference for students enrolled in food service courses, a 5 to 9 point difference for students enrolled in clothing related, child care, and cooperative education programs in the direction of higher mean scores for those categorized advantaged.

Attitude Towards Work. The students in each occupational area, ability level category, and whether advantaged or disadvantaged have positive attitudes toward work. Cooperative education students had slightly more positive attitudes than students enrolled in the three other areas, with students in child care ranking last. Disadvantaged students did not differ sharply from advantaged students in terms of mean scale scores, except in child care on post-test results, and on pre-test scores for cooperative education students. In general, responses on the scale did not show change consistently between pre-test and post-test.

Self-Concepts of Ability. Students enrolled in home economics related occupation courses tend generally to have favorable self-concepts of ability. The mean scores suggest that these self-concepts may be fairly objective, if one accepts the assumption that teacher ratings of ability are reasonably reliable and valid ratings. Furthermore, during the school year a statistically significant number of students apparently developed more favorable opinions of their work and their ability to earn above average grades.

Attitudes Toward School. Student's attitudes toward school were positive as evidenced by mean scores equal to or exceeding the theoretical mean of the scale. Variations between occupational areas, advantaged-disadvantaged categories, and pre-tests and post-tests were relatively small and in no consistent direction. Item analysis found a statistically significant ($.05 < p < .10$) shift in responses on the pre-test and post-test in the direction of a larger proportion of students reporting their problems to be average, rather than at either extreme.

Attitudes Toward Home Economics. Students enrolled in home economics related occupation courses hold positive attitudes towards home economics. Variations between means by occupational areas suggest no marked differences in students on this variable. The findings also indicate that this positive attitude was not modified to any extent by the instruction in the occupation courses.

Attitude Towards Job. Mean scores indicate that, in general, students tend to hold positive attitudes towards the type of job for which the course prepares them. Significant differences did not appear for the various occupational areas, nor do students categorized as advantaged differ from those categorized as disadvantaged. The occupation courses do apparently help some students to crystallize preferences for some types of work and dislike for others as indicated by an approximate ten percent shift in responses on two specific items. The shifts were a decrease in commitment to the length of time students reported planning to work in the job and in liking the type of work.

Interest in Occupational Training. Students indicate an average interest in occupational training. Although not a strong relationship, some of the findings suggest an increase in interest for occupational training of the average and below average ability categories. There was no relationship with occupational area.

This relationship finds some corroboration in the results for advantaged and disadvantaged categories of students. First, in that variations between categories were minimal in general, and secondly that the mean scores of the disadvantaged tended to increase from pre-test to post-test in the same degree or slightly more so than advantaged students.

Some ambiguities are apparent in the items, and thus are open to several interpretations. Specifically, a decrease in the number agreeing, at the time of the post-test, that they need to prepare for a job after high school may indicate that they believe the training they are acquiring is good and obviates further need. On the other side one could assess this as an inadequacy in the instruction which did not sensitize and motivate students to set higher goals which might require more training.

Similarly, the decrease, at the time of the post-test, of those agreeing that they need to learn "how to go about getting a job" suggests that for some the preparation has given them a sense of adequacy in this sphere. The same applies to the significant shift in responses regarding behavior on job interviews. Courses apparently helped move some students in the direction of believing some preferences and aptitudes for some types of work were emerging as evidenced by the shift from "agreeing" that they didn't know the job for which they were suited to being "uncertain."

Attitudes Towards Working With Others. With few exceptions mean scores of ability categories by occupational area were at or above the theoretical mean

of the scale. Post-test scores as well as pre-test scores clustered close around the mean, and indicated no or minimal change between pre-test and post-test.

Advantaged and disadvantaged students did not differ from each other to any extent of practical significance.

Self-Evaluation in the World of Work. Students in each occupational area showed gains between pre-test and post-test scores with several exceptions for the below average ability categories, one in food service where a loss occurred, and in co-operative education where the change was so small (.8) that stability seems indicated. Mean scores did cluster around the theoretical mean of the scale, and frequently exceeded it. Steady progression of means for some occupational areas suggest a positive linear relationship with ability, however, this was not a consistent pattern. The lack of consistency may be in part, a function of the lower reliability of the scale for below average students.

A comparison of advantaged and disadvantaged students by occupational area indicated that in three* of the four cases, mean scores of the disadvantaged were somewhat lower than the mean scores for advantaged students. However, disadvantaged students i.e., clothing related and co-operative education, made larger gains between pre-test and post-test.

On the basis of items on this scale in which significant shifts occurred between pre-test and post-test, one could infer (alternative interpretations are possible) that as the course neared completion, larger proportions of students felt more ready to get a job in the particular area; increased in feelings of confidence relative to work; were able to admit mistakes; were less self-conscious; had more faith in their abilities and were less easily discouraged; were able to give preference to group needs over individual wishes; and respected persons who believed differently than they.

In conclusion, items on this scale tapped more definitively the possible affective gains from course instruction than other measures included in the student questionnaire.

Self-Confidence. Mean scores of students enrolled in the four occupational areas were not markedly different on general self-confidence either at the time of the pre-test or post-test. The picture which emerged is a group of students with a modest and probably realistic self-concept of confidence which was not altered to any measurable degree during participation in the

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*In the fourth case, the mean of disadvantaged students exceeded the mean of advantaged students.

course. Furthermore, only among students in child care was there much discernable difference between those categorized, advantaged and disadvantaged.

Interest in Earning Money. Students enrolled in home economics occupation courses were about average in their interest in earning money. The level of interest was not measurably influenced during course instruction.

Expectations from course. On the basis of mean scores most students enrolled in home economics occupation courses had favorable expectations for the course as indicated by mean scores exceeding the theoretical mean of the scale. Although some variations did occur between pre-test and post-test means, these were small for all ability categories in each occupational area and for advantaged and disadvantaged categories.

Teacher Ratings of Student Behaviors. Teachers rated students on ten attributes as observed by the teacher. These were: appearance on the job; co-operation with co-workers; attitudes toward regulations, acceptance of supervision, management, dependability, adaptability, attitudes towards public, pride on job, and suitability.

Most categories of students had mean teacher ratings of acceptable, or above, on appearance on the job. Patterns of variation suggest a relationship between ability categories and teacher ratings of appearance. A positive relationship is suggested between being categorized as advantaged and receiving higher teacher mean ratings, except for students in co-operative education where the relationship was a negative one.

Comparisons of pre-test and post-test ratings suggest that the instruction in home economic occupation courses generally had minor, if any influence on appearance.

Relative to cooperativeness, on the basis of mean score analysis, students enrolled in home economics occupation courses were rated acceptable or above, with several exceptions being rated marginal to acceptable. Mean ratings for students in food service courses tended to be somewhat lower than for students in other areas. Consistent and marked differences between advantaged and disadvantaged categories of students were not evident. Those disadvantaged had a lower mean rating in the areas of food service and clothing related occupations but had a higher mean rating in co-operative education. Slight gains were made between pre-test and post-test mean ratings, except in the cases of several ability categories.

With reference to attitudes towards regulations, food service student categories tended to be rated the lowest; co-operative education students, the

highest, with clothing and child care areas in between. With the exception of food service, all categories of students were rated marginal to acceptable, acceptable, or good.

This may in part, be related to the greater importance of regulations regarding the handling of food to maintain hygienic conditions. Since behavior in these areas has, in large part, become habitual over the years, alteration of conduct is likely to be more difficult.

Acceptance of supervision was defined operationally as the ease of accepting criticism. Students enrolled in home economics occupations were rated as generally receptive to criticism. Ratings were lower for those in food service than in the other three areas. Slight gains between pre-test and post-test ratings were reported for two of three ability categories in food service, all three ability categories in clothing related occupations, and two of three ability categories in co-operative education. Relative to advantaged and disadvantaged, differences were not consistent nor large. While disadvantaged had lower mean ratings for food service, this category had the higher mean rating for co-operative education. Some evidence suggested a positive relationship between ability and higher ratings but this was not consistently the case.

Relative to management, students in food service were rated the lowest, followed by child care, clothing related, and co-operative education. For the last three occupational areas mentioned above, mean ratings exceeded the theoretical mean, except for low ability students in child care. Thus, students were rated as acceptable to good. Variations between advantaged and disadvantaged showed lower means for the disadvantaged in food service and clothing related occupation courses, and a higher mean in co-operative education.

Dependability was operationally defined as punctuality, loyalty and honesty. The lowest mean dependability ratings were obtained by food service students, and the highest by those in co-operative education. Gains between pre-test and post-test though sometimes slight were reported for each ability category and each occupational area. Advantaged students had higher mean ratings than disadvantaged in food service and clothing related occupations. There was no difference between these categories of co-operative education students. Generally, then, categories of students were rated between acceptable and good on dependability and showed gains between the pre-test and post-test.

With reference to adaptability and initiative, all categories of students received acceptable and above ratings, with the single exception of the below average ability category in food service. Generally, disadvantaged students received lower ratings than advantaged except those in co-operative education.

Attitudes of students toward the public were rated to be acceptable, good

in one case, and very good by the time of the post-test in three of the four occupational areas. In food service only those of average ability were rated acceptable, the remaining two categories were less than acceptable. With the exception of food service, ratings were positively related with ability level. With the exception of co-operative education, ratings were positively related to being categorized as advantaged. Generally, low to modest gains between pre-test and post-test were made in ratings of each category.

Mean ratings on pride in job at the time of the post-test were acceptable to good with the exception of Ability categories 1 and 3 in food service. Mean ratings tended to be positively related to ability level, although this did not hold for food service. Mean ratings in three of the four occupational areas tended to be positively related to advantaged-disadvantaged status, however, except in food service, disadvantaged students were rated acceptable at the time of the post-test. Generally, slight gains between pre-test and post-test scores were reported for most categories.

Relative to suitability, with few exceptions, mean ratings of students enrolled in home economics occupation courses indicated an acceptable level. Trends of progressions of means showed mean ratings tended to increase as ability increased and students were categorized as advantaged. Mean ratings for co-operative education students were the exception to this. Slight gains between pre-test and post-test were reported for most categories.

Follow-Up of 1970 and 1971 Graduates. Follow-up data were obtained for approximately 72 percent (N=201) of the students surveyed by participating teachers in 1971. Approximately 88 percent (N=114) were returned from the 28 surveys sent out by participating teachers in 1972. Findings indicated that between 30 and 45 percent of students did not take jobs upon graduation. Of those employed, the largest number (i.e. between 50 to 70 percent) obtained jobs in areas for which the course had prepared them. Of students employed in jobs for which the course prepared them in excess of 90 percent for 1971 and 1972 reported that they like their work; this compared with approximately 85 percent employed in related jobs, and between 70 and 75 percent employed in unrelated jobs. This finding is consistent with findings from nation wide studies reported by Marshall (Manpower, Nov. 1972, p. 8).

Conclusions and Implications

A Standards Approach to Program Evaluation. Data from teachers of home economics occupation courses and programs were elicited for the purpose of assessing whether some standards, drawn from funding legislation and other sources, were met. These include the qualifications of professional staff, student-teacher ratio, instructional period, use of local employment data, provision for work experience, students with special needs, loss of students, and use of advisory committees.

Instruction in home economics occupation courses is provided by teachers who, with a few exceptions, have earned Bachelors degrees and approximately 30 percent have Masters degrees. On the criterion of formal education, the teachers are qualified to plan and implement curriculum. Between 40 and 85 percent report work experience other than teaching.

The student-teacher ratio at approximately 14 to 1 is quite favorable to effective instruction, as is the slight shift to increased instruction time.

The fact that an increased proportion of teachers reported fairly recent surveys of local employment opportunities may indicate that greater emphasis is being given to the need to plan and to implement programs in relation to manpower demand.

All courses and programs provided either simulated (approximately 60 percent) or actual work experience (approximately 40 percent).

The courses evaluated were serving large proportions of students from low income families and disadvantaged families. Students were predominantly of average and below ability levels. Although, the proportion of minority students was comparatively low at 16 percent in 1971, it did increase in 1972 to 24 percent.

Marshall (Manpower, November, 1972, p. 5) reports that the 20 percent minority enrollment figure in the nation, in 1969, is believed to be higher than the actual percent enrolled. Within this perspective, the programs in New Jersey participating in the study compare quite favorably. Marshall also reports that for secondary, post-secondary, and adult vocational programs the ratio of completions to enroliments ranges between 33 and 40 percent (p. 8). The 9 percent loss of students reported for the 23 programs participating in 1972 provides one basis for concluding that the holding power of programs is quite good. The presence of other intervening variables is acknowledged.

The discrepancy between the importance placed on advisory councils by legislation, and the formation and use made of advisory councils by local education agencies points to the possibility that some programs are not complying with the law. A careful study of impediments to effective use of advisory councils might be in order.

Student Outcomes: A Basis of Program Evaluation. Instruction did result in an increase in knowledge of course content for students in the areas of clothing and co-operative education. Student pre-test scores indicated a reasonable level of knowledge of course content in all four areas. This may have resulted from instruction in previous home economics courses and thus course instruction in the occupation course reinforced prior learning. This may partially explain the no change for food service and child care whereas, some appreciable

gains were made by students in clothing related and co-operative education courses. The limitation of testing course content by paper and pencil testing may contribute to the limited evidence of gains particularly in view of the ability levels of students and the liklihood of a) limited reading skills; and b) negative pre-conditioning to paper-pencil tests, through years of limited success in school.

In the area of self-evaluation in work which is more specifically and directly related to the objectives of home economics occupation courses, than some of the other attitudes measured, the significant shifts which occurred in item responses attest to some degree of success in achieving course objectives. Experiences in the course may have been instrumental in some of the significant shifts in perceptions of ability, problems in school, interest in occupational training, and attitudes toward job which were consistent with course objectives.

The stability of results on measures of other variables such as general level of self-confidence, attitude towards home economics, attitudes toward work, and attitudes toward working with others, from several vantage points is neither surprising nor an indication of failure of instruction. First, these variables are generalized attitudes formed through many years of varied experiences. Findings from social-psychological research indicate that these types of attitudes change slowly. Furthermore, the attitudes of students as evidenced on the pre-test mean scores were not extreme and thus it is questionable as to what and how much change in scores would constitute a positive outcome from instruction. A similar perspective helps explain the fairly minimal changes in the behavior rated by teachers. These behaviors fall within the category of habitual modes of interacting with others acquired from the pre-school years within the family, through the elementary and junior high years. Once again, mean scores of students were close to the theoretical scale means at the time of the pre-test.

Follow-up data on graduates must be viewed conservatively due to the limited number of programs from which data were available. Marshall (Manpower, November, 1972, p. 8) reports that nationally, more than 1/2 of graduates from secondary vocational programs go for further schooling. For these programs between 30 and 50 percent did not seek employment; further schooling, military and marriage were partial explanations.

Of all high school vocational graduates, according to Marshall (1972, p. 6) 1/4 enter jobs in their field of training. Of all students responding for these programs, in 1971 and 1972, between 30 and 38 percent were employed in jobs for which the course prepared them. Approximately 10 percent of the total were in related jobs. Thus making the total instructional accountability approximately 40 to 48 percent.

In brief, the record, from available data, indicates that these programs

have achieved a relative degree of success in fulfilling program objectives.

Systematizing Local Education Agency Evaluations: A Basis for State-Wide Program Evaluation, Assessment and Recommendations. The body of this report provides the best empirical evidence relative to the strength and weakness of using data from local education agencies as a basis for assessing program outcomes within the state. Specifically, it was possible to systematize LEA evaluations by providing uniform data collection tools and specifying procedures. This uniformity in tools and procedures made it feasible to combine data from local programs, to group data in relevant categories and to analyze it. The results provide a more comprehensive description and cross comparisons between ability categories, occupational areas, and pre-testing and post-testing of a larger number of students in the state than has been available before.

According to observations of the state department home economics staff, teachers of occupation courses became much more sensitive to and knowledgable about evaluation.

Furthermore, there is every reason to have confidence in the integrity with which these teachers cooperated in providing both pre-test and post-test data.

In several areas there are some apparent weaknesses, One area is that of measurement. Paper and pencil tests have some definite limitations as attitude and information measures and particularly so with students who are not academically oriented. Similarly observation scales have other limitations, and these were, in all liklihood, in operation with teacher ratings of student behaviors. One teacher specifically explained that she had not returned post-test materials because her class, of predominantly minority students from disadvantaged low-income families, found reading the tests too difficult and thus avoided the task by random marking of responses.

A second weakness was in the low proportion of returns of post-test materials. Follow-up telephone calls were made to increase responses. Some teachers reported atypical circumstances which had developed in their positions making the post-testing difficult or the scoring and returning of materials impossible. There was a considerable time demand placed on the teacher. This, however, must be analyzed in terms of whether the time spent on materials for the project reduced some time which was needed previously for evaluative processes which she employed. Although some consideration was given to developing scoring procedures to be done by project staff, this was not implemented, because it thwarted achieving the purpose of immediate feedback to the teacher as input to her instruction during the course and at its conclusion.

The proportion of returns reduced the extent to which findings can be generalized to other programs in the state.

In conclusion, the following recommendations are presented for consideration.

First, at regular intervals, e.g. every three or four years, a representative sample of occupation programs should be drawn. Teachers of these programs should be asked to participate and every incentive to participate throughout a pre-test and post-test be provided.

Secondly, the procedures for systematizing the LEA evaluation should be formulated to restrict the variables to be measured to those most directly linked to program objectives. Teachers should be involved in analyzing present course content to differentiate new concepts to be presented in the instruction, from concepts presented in previous instruction, which are to be reinforced. Such a procedure should improve the balance and direction of effort expended in instruction and lead to the development of or refinement of content measures to be used in evaluation.

Thirdly, evaluation procedures and materials used should be made available to teachers of all programs in the state for their use in intervening years. The Vocational Division might advisedly ask that these data for each local program be included in the final report made by each LEA. The findings from the analysis of data from the representative random sample would provide a type of normative basis for assessing the relative effectiveness of a specific program.